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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/424,272	11/18/1999	EUGEN PAVEL	21306	7762

535 7590 04/16/2004

THE FIRM OF KARL F ROSS
5676 RIVERDALE AVENUE
PO BOX 900
RIVERDALE (BRONX), NY 10471-0900

EXAMINER

PATEL, GAUTAM

ART UNIT	PAPER NUMBER
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2655

6

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/424,272

Applicant(s)

PAVEL, EUGEN

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Response to Amendment:

1. This is in response to amendment filed on 3-16-04 (Paper # 5).
2. Claims 4-7 remain for examination. Claims 4-7 are newly presented for examination.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-5 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Prasad et al., US. patent 5,912,257 (hereafter Prasad) in view of Abe et al., US. patent 4,703,019 (hereafter Abe).

As to claim 4, Prasad discloses the invention as claimed [see Figs. 1-32, especially, 21 and 31-32] including A data storage and retrieval system comprising an optical memory comprising:

An optical memory [fig. 31, unit 2]; and

At least one laser [fig. 31, unit 10] for directing a beam [fig. 31, Laser beam 12] at a said memory and adapted to read stored information from and write information to be stored to said memory [col. 71, line 41 to col. 73, line 32].

Prasad discloses a data storage and retrieval system characterized in that the fluorescent photosensitive ceramics [see col. 41, lines 43-64]. Prasad does not specifically disclose that vitroc ceramic [or a type of glass-ceramic] can also be used in his memory construction to the extent claimed.

However, the use of glass ceramics for data storage has been well known in the art for along time as they offer economic and performance alternatives with substantial improvements.

Also Abe clearly discloses: that the fluorescent photosensitive vitroceramics are very suitable for optical memories, in other words vitroceramics are used as information storage medium or memories [col. 2, lines 21-37]. Both Prasad and Abe are interested in improving the material for storage, both indicates various materials for a memory or storage and both indicates fluorescent photosensitive glasses as good information recording mediums.

One of ordinary skill in the art at the time of invention would have realized that it would be advantageous to provide economic and performance enhancements by providing inexpensive raw storage material.

Therefore, it would have been obvious to have used the fluorescent photosensitive glass in the system of Prasad as taught by Abe because one would be motivated to reduce the cost of the memory by using inexpensive raw materials for the construction of the memory [col. 2, lines 21-24; Abe].

5. As to claim 5, Abe discloses:

Memory is composed of a fluorescent photo-sensitive glass [col. 2, lines 21-37].

6. As to claim 7, Prasad discloses:

A confocal microscope [fig. 31, unit 6] [col. 72, line 41 to col. 73, line 32];

A tunable laser having a light pulses at a rate of a maximum of 100fs [col. 41, line 65 to col. 42, line 16], for reading and writing from and to said memory through said confocal microscope [col. 72, line 41 to col. 73, line 32];

A vertical scanning system fig. 31, unit 18 and 20] and a radial scanning system [fig. 31, unit 16] used for the movement of writing and excitation beams over said memory [col. 72, line 41 to col. 73, line 32];

An engine [magnetic coil; not shown] for rotating said memory; and

An excitation laser [fig. 31, unit 10], having a beam perpendicular to a fluorescent beam from said memory and provided with a vertical scanner [col. 72, line 41 to col. 73, line 32] for reading said memory by one photon process [col. 42, lines 17-30 and fig. 16].

NOTE: These system inherently reads with one photon because reading is done on one surface at a time and does not require two photon process for reading.

7. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Prasad and Abe as applied to claim 4 above, and further in view of Dejneka, US. patent 5,955,388 (hereafter Dejneka).

As to claim 6, Prasad and Abe discloses a data storage and retrieval system characterized in that the fluorescent photosensitive ceramics or glass. Prasad does not specifically disclose that vitroceraamic [or a type of glass-ceramic] can also be used in his system to the extent claimed.

However, the use of glass ceramics for data storage has been well known in the art as they offer economic and performance alternatives with substantial improvements.

Also Dejneka clearly discloses: that the fluorescent photosensitive vitroceraamics are good hosts for 3-D displays and memories, in other words vitroceraamics are used as information recording medium [col. 2, lines 15-54]. Both Prasad and Dejneka are interested in improving the material for storage, both indicates various materials for 3-dimensional memory and storage and both indicates fluorescent photosensitive glasses as good information recording mediums.

One of ordinary skill in the art at the time of invention would have realized that it would be advantageous to provide economic and performance enhancements by providing alternative storage material such as glass ceramics or variation of these glass ceramics. Therefore, it would have been obvious to have used the fluorescent photosensitive vitroceraamics in the system of Prasad as taught by Dejneka because one

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would be motivated to improve the cost and performance of the recording and reading system by using the fluorescent photosensitive vitroceraamics.

8. Applicant's arguments with respect to new claims 4-7 have been considered but are moot in view of the new grounds of rejection.

Other prior art cited

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Wu (US. patent 4,297,417) Photosensitive colored glasses ..
- b. Blatchford et al. (US. patent 3,694,627) Heating element ..
- c. Slegers et al. (US. patent 5,216,664) Optically readable disc ..

10. Applicant's amendment necessitated the new grounds of rejection presented in this office action. Accordingly, THIS ACTION IS MADE **FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

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Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

A handwritten signature in black ink, appearing to read 'Gautam R. Patel', with a long horizontal line extending to the right.

Gautam R. Patel
Primary Examiner
Group Art Unit 2655

April 14, 2004